

ANALYTICAL REPORT

Job Number: 280-51935-1

Job Description: 995|Waimanalo Gulch LF

For:

Waste Management
Waimanalo Gulch Landfill
92-460 Farrington Highway
Kapolei, HI 96707

Attention: Mr. Justin Lottig



Approved for release.
Betsy A Sara
Project Manager II
2/21/2014 9:34 AM

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02/21/2014

cc: Mr. Mark Hofferbert
Ms. Margie Thach

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is E87667.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

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CASE NARRATIVE

Client: Waste Management

Project: 995|Waimanalo Gulch LF

Report Number: 280-51935-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

This report may include reporting limits (RLs) less than TestAmerica's standard reporting limit. The reported sample results and associated reporting limits are being used specifically to meet the needs of this project. Note that data are not normally reported to these levels without qualification because they are inherently less reliable and potentially less defensible than required by the latest industry standards.

Sample Receiving

The sample was received on 02/07/2014; the sample arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 1.5 C.

Holding Times

All holding times were met.

Method Blanks

Total Zinc Method 200.7 was detected in the Method Blank below the project established reporting limit. No corrective action is taken for any values in Method Blanks that are below the requested reporting limits. The Method Blank data are included at the end of this report.

All other Method Blanks were within established control limits.

Laboratory Control Samples (LCS)

The Method 625 laboratory control sample and the laboratory control sample duplicate (LCS/LCSD) recovered below the lower control limit for Hexachlorocyclopentadiene at 7% (control limits 10%-120%). Hexachlorocyclopentadiene has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction and reanalysis were not performed.

All other Laboratory Control Samples were within established control limits.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

The method required MS/MSD could not be performed for Method 625 and Method 1664A due to insufficient sample volume, however, LCS/LCSD pairs were analyzed to demonstrate method precision and accuracy.

The Matrix Spikes and Matrix Spike Duplicates performed on samples from other clients exhibited MS and MSD recoveries outside control limits for Total Iron, Total Lead Method 200.7 and Chemical Oxygen Demand (COD) Method 410.4. In addition, the RPD result was outside the RPD limit for COD. Because the corresponding Laboratory Control Samples and the Method Blank samples were within control limits, these anomalies may be due to matrix interference and no corrective action was taken.

The percent recoveries and/or relative percent difference of the MS/MSD performed on a sample from another client were outside control limits for Total Kjeldahl Nitrogen (TKN) Method 351.2 because the sample concentration was greater than four times the spike amount. Because the corresponding Laboratory Control Sample and the Method Blank sample were within control limits, no corrective action was taken.

All other MS and MSD samples were within established control limits.

General Comments

For samples requiring analysis at a dilution, the dilution factor has been multiplied by the Method Detection Limit (MDL) for each analyte and evaluated versus the project-specific reporting limit (PSRL). If the obtained value is below the PSRL, then the PSRL is preserved as the reporting limit for the diluted result, otherwise, the obtained value becomes the reporting limit. This is done in order to maintain the PSRL to meet permit requirements at the request of the client and to report the lowest possible RL for each analyte.

The analysis for Biochemical Oxygen Demand (BOD) was performed by TestAmerica Honolulu. Their address and phone number are:
TestAmerica Honolulu
1946 Young Street
Suite 400A
Honolulu, HI 96826
Phone: 808.486.5227

The analysis for Hexavalent Chromium was performed at TestAmerica's Irvine facility.
TestAmerica Irvine
17461 Derian Avenue
Suite 100
Irvine, CA 92614
Phone: 949.261.1022

EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-51935-1

Lab Sample ID Analyte	Client Sample ID Analyte	Result	Qualifier	Reporting Limit	Units	Method
280-51935-1						
Field pH	DB01E	8.28			SU	Field Sampling
Ammonia		0.18		0.10	mg/L	350.1
Nitrogen, Kjeldahl		0.89		0.50	mg/L	351.2
Nitrate Nitrite as N		6.0		0.10	mg/L	353.2
Phosphorus, Total		0.33		0.050	mg/L	365.1
Chemical Oxygen Demand		25		20	mg/L	410.4
Total Suspended Solids		82		4.0	mg/L	SM 2540D
Nitrogen, Total		6.9		0.10	mg/L	Total Nitrogen
<i>Dissolved</i>						
Chromium, hexavalent		1.5		1.0	ug/L	218.6
<i>Total Recoverable</i>						
Cadmium		0.00082	J	0.0050	mg/L	200.7 Rev 4.4
Iron		5.0		0.10	mg/L	200.7 Rev 4.4
Lead		0.010		0.0090	mg/L	200.7 Rev 4.4
Zinc		0.048	B	0.020	mg/L	200.7 Rev 4.4

METHOD SUMMARY

Client: Waste Management

Job Number: 280-51935-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Semivolatile Organic Compounds (GC/MS)	TAL DEN	40CFR136A 625	
Liquid-Liquid Extraction	TAL DEN		40CFR136A 625
Metals (ICP)	TAL DEN	EPA 200.7 Rev 4.4	
Preparation, Total Recoverable Metals	TAL DEN		EPA 200.7
Mercury (CVAA)	TAL DEN	EPA 245.1	
Preparation, Mercury	TAL DEN		EPA 245.1
HEM and SGT-HEM	TAL DEN	1664A 1664A	
HEM and SGT-HEM (SPE)	TAL DEN		1664A 1664A
Nitrogen, Ammonia	TAL DEN	MCAWW 350.1	
Nitrogen, Total Kjeldahl	TAL DEN	MCAWW 351.2	
Nitrogen, Total Kjeldahl	TAL DEN		MCAWW 351.2
Nitrogen, Nitrate-Nitrite	TAL DEN	MCAWW 353.2	
Phosphorus, Total	TAL DEN	EPA 365.1	
Phosphorus, Total	TAL DEN		MCAWW 365.2/365.3/365
COD	TAL DEN	MCAWW 410.4	
Solids, Total Suspended (TSS)	TAL DEN	SM SM 2540D	
Nitrogen, Total	TAL DEN	EPA Total Nitrogen	
Field Sampling	TAL DEN	EPA Field Sampling	
General Sub Contract Method	TAL HON	Subcontract	
Chromium, Hexavalent (Ion Chromatography)	TAL IRV	EPA 218.6	
Sample Filtration, Field			FIELD_FLTRD

Lab References:

TAL DEN = TestAmerica Denver

TAL HON = TestAmerica Honolulu

TAL IRV = TestAmerica Irvine

Method References:

1664A = EPA-821-98-002

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

METHOD / ANALYST SUMMARY

Client: Waste Management

Job Number: 280-51935-1

Method	Analyst	Analyst ID
40CFR136A 625	Kiekel, Daniel C	DCK
EPA 200.7 Rev 4.4	Harre, John K	JKH
EPA 245.1	Mooney, Joseph C	JM
EPA Field Sampling	Field, Sampler	FS
1664A 1664A	Benson, Alex F	AFB
MCAWW 350.1	Graham, Shane M	SMG
MCAWW 351.2	Woolley, Mark -	MW1
MCAWW 353.2	Ayala, Delaina V	DVA
EPA 365.1	Schwemin, Andrew J	AJS
MCAWW 410.4	Jewell, Connie C	CCJ
SM SM 2540D	Woolley, Mark -	MW1
EPA Total Nitrogen	Sullivan, Roxanne K	RKS
EPA 218.6	Welch, Raquel	RW

SAMPLE SUMMARY

Client: Waste Management

Job Number: 280-51935-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-51935-1	DB01E	Water	02/04/2014 1055	02/07/2014 1020

SAMPLE RESULTS

Analytical Data

Client: Waste Management

Job Number: 280-51935-1

Client Sample ID: **DB01E**Lab Sample ID: 280-51935-1
Client Matrix: WaterDate Sampled: 02/04/2014 1055
Date Received: 02/07/2014 1020**625 Semivolatile Organic Compounds (GC/MS)**

Analysis Method:	625	Analysis Batch:	280-213417	Instrument ID:	SMS_B2
Prep Method:	625	Prep Batch:	280-212319	Lab File ID:	B2-4348.D
Dilution:	1.0			Initial Weight/Volume:	1030.3 uL
Analysis Date:	02/19/2014 0013			Final Weight/Volume:	1000 uL
Prep Date:	02/10/2014 1715			Injection Volume:	0.5 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Alpha-Terpineol	ND		0.0019	0.010
Benzoic acid	ND		0.0097	0.050
p-Cresol	ND		0.00024	0.010
Pentachlorophenol	ND		0.019	0.060
Phenol	ND		0.0019	0.010

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	98		50 - 120
2-Fluorobiphenyl	80		36 - 120
2-Fluorophenol	77		30 - 120
Nitrobenzene-d5	77		45 - 120
Phenol-d5	78		36 - 120
Terphenyl-d14	51		41 - 120

Analytical Data

Client: Waste Management

Job Number: 280-51935-1

Client Sample ID: **DB01E**Lab Sample ID: 280-51935-1
Client Matrix: WaterDate Sampled: 02/04/2014 1055
Date Received: 02/07/2014 1020**218.6 Chromium, Hexavalent (Ion Chromatography)-Dissolved**

Analysis Method:	218.6	Analysis Batch:	440-162302	Instrument ID:	IC-22
	N/A	Prep Batch:	N/A	Lab File ID:	440-0036293-013.d
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	02/14/2014 1950			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	1 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chromium, hexavalent	1.5		0.25	1.0

Analytical Data

Client: Waste Management

Job Number: 280-51935-1

Client Sample ID: DB01ELab Sample ID: 280-51935-1
Client Matrix: WaterDate Sampled: 02/04/2014 1055
Date Received: 02/07/2014 1020**200.7 Rev 4.4 Metals (ICP)-Total Recoverable**

Analysis Method:	200.7 Rev 4.4	Analysis Batch:	280-212571	Instrument ID:	MT_025
Prep Method:	200.7	Prep Batch:	280-212104	Lab File ID:	25A8021114.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	02/12/2014 0428			Final Weight/Volume:	50 mL
Prep Date:	02/11/2014 0730				

Analyte	Result (mg/L)	Qualifier	MDL	RL
Arsenic	ND		0.0044	0.015
Cadmium	0.00082	J	0.00045	0.0050
Iron	5.0		0.022	0.10
Lead	0.010		0.0026	0.0090
Selenium	ND		0.0049	0.015
Zinc	0.048	B	0.0045	0.020
Silver	ND		0.00093	0.010

245.1 Mercury (CVAA)

Analysis Method:	245.1	Analysis Batch:	280-212634	Instrument ID:	MT_034
Prep Method:	245.1	Prep Batch:	280-212435	Lab File ID:	140211taa.txt
Dilution:	1.0			Initial Weight/Volume:	30 mL
Analysis Date:	02/11/2014 1707			Final Weight/Volume:	30 mL
Prep Date:	02/11/2014 1230				

Analyte	Result (mg/L)	Qualifier	MDL	RL
Mercury	ND		0.000027	0.00020

Analytical Data

Client: Waste Management

Job Number: 280-51935-1

General Chemistry**Client Sample ID:** DB01E

Lab Sample ID: 280-51935-1

Date Sampled: 02/04/2014 1055

Client Matrix: Water

Date Received: 02/07/2014 1020

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
HEM	ND		mg/L	1.6	5.0	1.0	1664A
	Analysis Batch: 280-213132		Analysis Date: 02/14/2014 1520				
	Prep Batch: 280-213068		Prep Date: 02/14/2014 0943				
Ammonia	0.18		mg/L	0.022	0.10	1.0	350.1
	Analysis Batch: 280-212560		Analysis Date: 02/11/2014 1312				
Nitrogen, Kjeldahl	0.89		mg/L	0.18	0.50	1.0	351.2
	Analysis Batch: 280-212772		Analysis Date: 02/12/2014 2112				
	Prep Batch: 280-212538		Prep Date: 02/11/2014 2132				
Nitrate Nitrite as N	6.0		mg/L	0.019	0.10	1.0	353.2
	Analysis Batch: 280-212562		Analysis Date: 02/11/2014 2218				
Phosphorus, Total	0.33		mg/L	0.0050	0.050	1.0	365.1
	Analysis Batch: 280-212561		Analysis Date: 02/11/2014 2314				
	Prep Batch: 280-212492		Prep Date: 02/11/2014 1604				
Chemical Oxygen Demand	25		mg/L	4.1	20	1.0	410.4
	Analysis Batch: 280-212585		Analysis Date: 02/12/2014 0822				
Total Suspended Solids	82		mg/L	2.8	4.0	1.0	SM 2540D
	Analysis Batch: 280-212142		Analysis Date: 02/08/2014 1035				
Nitrogen, Total	6.9		mg/L	0.042	0.10	1.0	Total Nitrogen
	Analysis Batch: 280-213248		Analysis Date: 02/17/2014 0820				

Analytical Data

Client: Waste Management

Job Number: 280-51935-1

Field Service / Mobile Lab**Client Sample ID:** DB01E

Lab Sample ID: 280-51935-1

Client Matrix: Water Date Sampled: 02/04/2014 1055

Date Received: 02/07/2014 1020

Analyte	Result	Qual	Units	Dil	Analysis	Date Analyzed	
					Method	Batch	Date Prepared
Field pH	8.28		SU	1.0	Field Sampling	280-212236	02/04/2014 1055

DATA REPORTING QUALIFIERS

Client: Waste Management

Job Number: 280-51935-1

Lab Section	Qualifier	Description
GC/MS Semi VOA	*	Recovery or RPD exceeds control limits
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
Metals	B	Compound was found in the blank and sample.
	F1	MS and/or MSD Recovery exceeds the control limits
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
General Chemistry	F1	MS and/or MSD Recovery exceeds the control limits
	4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
	F2	MS/MSD RPD exceeds control limits

QUALITY CONTROL RESULTS

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Prep Batch: 280-212319					
LCS 280-212319/2-A	Lab Control Sample	T	Water	625	
LCSD 280-212319/3-A	Lab Control Sample Duplicate	T	Water	625	
MB 280-212319/1-A	Method Blank	T	Water	625	
280-51935-1	DB01E	T	Water	625	
Analysis Batch:280-213067					
LCS 280-212319/2-A	Lab Control Sample	T	Water	625	280-212319
LCSD 280-212319/3-A	Lab Control Sample Duplicate	T	Water	625	280-212319
Analysis Batch:280-213417					
MB 280-212319/1-A	Method Blank	T	Water	625	280-212319
280-51935-1	DB01E	T	Water	625	280-212319

Report Basis

T = Total

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 280-212104					
LCS 280-212104/2-A	Lab Control Sample	R	Water	200.7	
MB 280-212104/1-A	Method Blank	R	Water	200.7	
280-51934-A-1-B MS	Matrix Spike	R	Water	200.7	
280-51934-A-1-C MSD	Matrix Spike Duplicate	R	Water	200.7	
280-51935-1	DB01E	R	Water	200.7	
Prep Batch: 280-212435					
LCS 280-212435/2-A	Lab Control Sample	T	Water	245.1	
MB 280-212435/1-A	Method Blank	T	Water	245.1	
280-51935-1	DB01E	T	Water	245.1	
280-51935-1MS	Matrix Spike	T	Water	245.1	
280-51935-1MSD	Matrix Spike Duplicate	T	Water	245.1	
Analysis Batch:280-212571					
LCS 280-212104/2-A	Lab Control Sample	R	Water	200.7 Rev 4.4	280-212104
MB 280-212104/1-A	Method Blank	R	Water	200.7 Rev 4.4	280-212104
280-51934-A-1-B MS	Matrix Spike	R	Water	200.7 Rev 4.4	280-212104
280-51934-A-1-C MSD	Matrix Spike Duplicate	R	Water	200.7 Rev 4.4	280-212104
280-51935-1	DB01E	R	Water	200.7 Rev 4.4	280-212104
Analysis Batch:280-212634					
LCS 280-212435/2-A	Lab Control Sample	T	Water	245.1	280-212435
MB 280-212435/1-A	Method Blank	T	Water	245.1	280-212435
280-51935-1	DB01E	T	Water	245.1	280-212435
280-51935-1MS	Matrix Spike	T	Water	245.1	280-212435
280-51935-1MSD	Matrix Spike Duplicate	T	Water	245.1	280-212435

Report Basis

R = Total Recoverable

T = Total

Field Service / Mobile Lab

Analysis Batch:280-212236				
280-51935-1	DB01E	T	Water	Field Sampling

Report Basis

T = Total

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:280-212142					
LCS 280-212142/1	Lab Control Sample	T	Water	SM 2540D	
LCSD 280-212142/2	Lab Control Sample Duplicate	T	Water	SM 2540D	
MB 280-212142/3	Method Blank	T	Water	SM 2540D	
280-51935-1	DB01E	T	Water	SM 2540D	
280-51935-1DU	Duplicate	T	Water	SM 2540D	
Prep Batch: 280-212492					
LCS 280-212492/3-A	Lab Control Sample	T	Water	365.2/365.3/365	
LCSD 280-212492/4-A	Lab Control Sample Duplicate	T	Water	365.2/365.3/365	
MB 280-212492/5-A	Method Blank	T	Water	365.2/365.3/365	
280-51928-F-3-B MS	Matrix Spike	T	Water	365.2/365.3/365	
280-51928-F-3-C MSD	Matrix Spike Duplicate	T	Water	365.2/365.3/365	
280-51935-1	DB01E	T	Water	365.2/365.3/365	
Prep Batch: 280-212538					
LCS 280-212538/1-A	Lab Control Sample	T	Water	351.2	
LCSD 280-212538/2-A	Lab Control Sample Duplicate	T	Water	351.2	
MB 280-212538/3-A	Method Blank	T	Water	351.2	
280-51869-C-3-B MS	Matrix Spike	T	Water	351.2	
280-51869-C-3-C MSD	Matrix Spike Duplicate	T	Water	351.2	
280-51935-1	DB01E	T	Water	351.2	
Analysis Batch:280-212560					
LCS 280-212560/19	Lab Control Sample	T	Water	350.1	
LCSD 280-212560/20	Lab Control Sample Duplicate	T	Water	350.1	
MB 280-212560/21	Method Blank	T	Water	350.1	
280-51935-1	DB01E	T	Water	350.1	
Analysis Batch:280-212561					
LCS 280-212492/3-A	Lab Control Sample	T	Water	365.1	280-212492
LCSD 280-212492/4-A	Lab Control Sample Duplicate	T	Water	365.1	280-212492
MB 280-212492/5-A	Method Blank	T	Water	365.1	280-212492
280-51928-F-3-B MS	Matrix Spike	T	Water	365.1	280-212492
280-51928-F-3-C MSD	Matrix Spike Duplicate	T	Water	365.1	280-212492
280-51935-1	DB01E	T	Water	365.1	280-212492
Analysis Batch:280-212562					
LCS 280-212562/29	Lab Control Sample	T	Water	353.2	
LCSD 280-212562/30	Lab Control Sample Duplicate	T	Water	353.2	
MB 280-212562/28	Method Blank	T	Water	353.2	
320-5869-B-2 MS	Matrix Spike	T	Water	353.2	
320-5869-B-2 MSD	Matrix Spike Duplicate	T	Water	353.2	
280-51935-1	DB01E	T	Water	353.2	

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:280-212585					
LCS 280-212585/9	Lab Control Sample	T	Water	410.4	
LCSD 280-212585/10	Lab Control Sample Duplicate	T	Water	410.4	
MB 280-212585/11	Method Blank	T	Water	410.4	
280-51738-B-2 MS	Matrix Spike	T	Water	410.4	
280-51738-B-2 MSD	Matrix Spike Duplicate	T	Water	410.4	
280-51935-1	DB01E	T	Water	410.4	
Analysis Batch:280-212772					
LCS 280-212538/1-A	Lab Control Sample	T	Water	351.2	280-212538
LCSD 280-212538/2-A	Lab Control Sample Duplicate	T	Water	351.2	280-212538
MB 280-212538/3-A	Method Blank	T	Water	351.2	280-212538
280-51869-C-3-B MS	Matrix Spike	T	Water	351.2	280-212538
280-51869-C-3-C MSD	Matrix Spike Duplicate	T	Water	351.2	280-212538
280-51935-1	DB01E	T	Water	351.2	280-212538
Prep Batch: 280-213068					
LCS 280-213068/2-A	Lab Control Sample	T	Water	1664A	
LCSD 280-213068/3-A	Lab Control Sample Duplicate	T	Water	1664A	
MB 280-213068/1-A	Method Blank	T	Water	1664A	
280-51935-1	DB01E	T	Water	1664A	
Analysis Batch:280-213132					
LCS 280-213068/2-A	Lab Control Sample	T	Water	1664A	280-213068
LCSD 280-213068/3-A	Lab Control Sample Duplicate	T	Water	1664A	280-213068
MB 280-213068/1-A	Method Blank	T	Water	1664A	280-213068
280-51935-1	DB01E	T	Water	1664A	280-213068
Analysis Batch:280-213248					
MB 280-213248/1	Method Blank	T	Water	Total Nitrogen	
280-51935-1	DB01E	T	Water	Total Nitrogen	

Report Basis

T = Total

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
HPLC/IC					
Analysis Batch:440-162302					
LCS 440-162302/6	Lab Control Sample	T	Water	218.6	
MB 440-162302/3	Method Blank	T	Water	218.6	
280-51935-1	DB01E	D	Water	218.6	
440-70361-A-1 MS	Matrix Spike	D	Water	218.6	
440-70361-A-1 MSD	Matrix Spike Duplicate	D	Water	218.6	

Report Basis

D = Dissolved

T = Total

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Surrogate Recovery Report**625 Semivolatile Organic Compounds (GC/MS)****Client Matrix: Water**

Lab Sample ID	Client Sample ID	TBP %Rec	FBP %Rec	2FP %Rec	NBZ %Rec	PHL %Rec	TPH %Rec
280-51935-1	DB01E	98	80	77	77	78	51
MB 280-212319/1-A		82	69	74	77	60	86
LCS 280-212319/2-A		94	76	77	77	76	84
LCSD 280-212319/3-A		93	77	76	77	76	85

Surrogate	Acceptance Limits
TBP = 2,4,6-Tribromophenol	50-120
FBP = 2-Fluorobiphenyl	36-120
2FP = 2-Fluorophenol	30-120
NBZ = Nitrobenzene-d5	45-120
PHL = Phenol-d5	36-120
TPH = Terphenyl-d14	41-120

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Method Blank - Batch: 280-212319**Method: 625****Preparation: 625**

Lab Sample ID:	MB 280-212319/1-A	Analysis Batch:	280-213417	Instrument ID:	SMS_B2
Client Matrix:	Water	Prep Batch:	280-212319	Lab File ID:	B2-4343.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	02/18/2014 2141	Units:	mg/L	Final Weight/Volume:	1000 uL
Prep Date:	02/10/2014 1715			Injection Volume:	0.5 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Alpha-Terpineol	ND		0.0020	0.010
Benzoic acid	ND		0.010	0.050
p-Cresol	ND		0.00025	0.010
Pentachlorophenol	ND		0.020	0.060
Phenol	ND		0.0020	0.010
Surrogate	% Rec		Acceptance Limits	
2,4,6-Tribromophenol	82		50 - 120	
2-Fluorobiphenyl	69		36 - 120	
2-Fluorophenol	74		30 - 120	
Nitrobenzene-d5	77		45 - 120	
Phenol-d5	60		36 - 120	
Terphenyl-d14	86		41 - 120	

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

**Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 280-212319**

**Method: 625
Preparation: 625**

LCS Lab Sample ID:	LCS 280-212319/2-A	Analysis Batch:	280-213067	Instrument ID:	SMS_B2
Client Matrix:	Water	Prep Batch:	280-212319	Lab File ID:	B2-4300.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	02/14/2014 1307	Units:	mg/L	Final Weight/Volume:	1000 uL
Prep Date:	02/10/2014 1715			Injection Volume:	0.5 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-212319/3-A	Analysis Batch:	280-213067	Instrument ID:	SMS_B2
Client Matrix:	Water	Prep Batch:	280-212319	Lab File ID:	B2-4301.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	02/14/2014 1337	Units:	mg/L	Final Weight/Volume:	1000 uL
Prep Date:	02/10/2014 1715			Injection Volume:	0.5 uL
Leach Date:	N/A				

Analyte	% Rec.						
	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
1,2,4-Trichlorobenzene	60	61	44 - 120	1	35		
1,2-Dichlorobenzene	58	55	32 - 120	5	42		
1,3-Dichlorobenzene	55	51	23 - 120	8	47		
1,4-Dichlorobenzene	55	52	24 - 120	6	49		
2,2'-Oxybis(1-chloropropane)	70	69	37 - 120	1	30		
2,4,6-Trichlorophenol	84	84	51 - 120	1	30		
2,4-Dichlorophenol	80	81	46 - 120	1	30		
2,4-Dimethylphenol	51	51	44 - 119	1	35		
2,4-Dinitrophenol	78	80	20 - 121	2	61		
2,4-Dinitrotoluene	92	92	57 - 120	0	35		
2,6-Dinitrotoluene	89	91	56 - 120	2	30		
2-Chloronaphthalene	73	75	60 - 118	2	30		
2-Chlorophenol	79	78	34 - 120	0	30		
2-Methylphenol	75	76	38 - 120	0	35		
2-Nitrophenol	82	82	47 - 120	0	30		
3,3'-Dichlorobenzidine	42	45	18 - 120	6	50	J	J
4,6-Dinitro-2-methylphenol	83	85	40 - 120	2	55		
4-Bromophenyl phenyl ether	79	82	53 - 120	4	34		
4-Chloro-3-methylphenol	79	80	57 - 120	1	30		
4-Chlorophenyl phenyl ether	81	83	51 - 120	3	30		
4-Nitrophenol	88	87	53 - 120	2	42		
Acenaphthene	75	76	47 - 120	2	30		
Acenaphthylene	72	73	33 - 120	2	30		
Anthracene	77	79	52 - 120	2	30		
Benzidine	23	24	10 - 218	3	50		
Benzo[a]anthracene	80	81	54 - 120	2	30		
Benzo[a]pyrene	78	80	39 - 120	3	73		
Benzo[b]fluoranthene	83	85	51 - 120	3	90		
Benzo[g,h,i]perylene	81	84	48 - 120	3	64		
Benzo[k]fluoranthene	86	86	49 - 120	0	50		
Bis(2-chloroethoxy)methane	78	78	50 - 120	1	30		
Bis(2-chloroethyl)ether	79	78	35 - 120	1	30		
Bis(2-ethylhexyl) phthalate	77	80	56 - 120	3	30		
Butyl benzyl phthalate	76	79	53 - 120	3	30		
Chrysene	81	83	51 - 120	2	30		
Dibenz(a,h)anthracene	82	84	45 - 120	2	78		

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

**Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 280-212319**

**Method: 625
Preparation: 625**

LCS Lab Sample ID:	LCS 280-212319/2-A	Analysis Batch:	280-213067	Instrument ID:	SMS_B2
Client Matrix:	Water	Prep Batch:	280-212319	Lab File ID:	B2-4300.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	02/14/2014 1307	Units:	mg/L	Final Weight/Volume:	1000 uL
Prep Date:	02/10/2014 1715			Injection Volume:	0.5 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-212319/3-A	Analysis Batch:	280-213067	Instrument ID:	SMS_B2
Client Matrix:	Water	Prep Batch:	280-212319	Lab File ID:	B2-4301.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	02/14/2014 1337	Units:	mg/L	Final Weight/Volume:	1000 uL
Prep Date:	02/10/2014 1715			Injection Volume:	0.5 uL
Leach Date:	N/A				

Analyte	% Rec.		RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD				
Diethyl phthalate	84	85	59 - 114	1	30	
Dimethyl phthalate	85	86	58 - 112	0	30	
Di-n-butyl phthalate	79	80	57 - 118	1	30	
Di-n-octyl phthalate	72	74	56 - 120	4	30	
Fluoranthene	81	82	58 - 120	1	30	
Fluorene	80	81	59 - 120	1	30	
Hexachlorobenzene	83	83	53 - 120	1	30	
Hexachlorobutadiene	55	53	27 - 116	2	41	
Hexachlorocyclopentadiene	7	7	10 - 120	3	82	J *
Hexachloroethane	49	46	40 - 113	6	52	
Indeno[1,2,3-cd]pyrene	74	77	50 - 120	4	73	
Isophorone	75	75	50 - 120	0	30	
Naphthalene	67	68	37 - 120	1	30	
n-Decane	39	34	28 - 120	12	61	
Nitrobenzene	77	77	46 - 120	0	30	
N-Nitrosodimethylamine	76	75	37 - 120	1	30	
N-Nitrosodi-n-propylamine	76	76	50 - 120	0	30	
N-Nitrosodiphenylamine	73	75	46 - 203	2	50	
p-Cresol	76	76	42 - 120	1	39	
Pentachlorophenol	88	88	46 - 120	0	30	
Phenanthrene	79	80	54 - 120	1	30	
Phenol	78	79	37 - 112	1	30	
Pyrene	79	81	55 - 115	2	30	
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits	
2,4,6-Tribromophenol	94		93		50 - 120	
2-Fluorobiphenyl	76		77		36 - 120	
2-Fluorophenol	77		76		30 - 120	
Nitrobenzene-d5	77		77		45 - 120	
Phenol-d5	76		76		36 - 120	
Terphenyl-d14	84		85		41 - 120	

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

**Laboratory Control/
Laboratory Duplicate Data Report - Batch: 280-212319**

**Method: 625
Preparation: 625**

LCS Lab Sample ID:	LCS 280-212319/2-A	Units:	mg/L	LCS Lab Sample ID:	LCSD 280-212319/3-A
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	02/14/2014 1307			Analysis Date:	02/14/2014 1337
Prep Date:	02/10/2014 1715			Prep Date:	02/10/2014 1715
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual		
1,2,4-Trichlorobenzene	0.0800	0.0800	0.0480	0.0485		
1,2-Dichlorobenzene	0.0800	0.0800	0.0462	0.0441		
1,3-Dichlorobenzene	0.0800	0.0800	0.0438	0.0404		
1,4-Dichlorobenzene	0.0800	0.0800	0.0444	0.0419		
2,2'-Oxybis(1-chloropropane)	0.0800	0.0800	0.0556	0.0553		
2,4,6-Trichlorophenol	0.0800	0.0800	0.0669	0.0673		
2,4-Dichlorophenol	0.0800	0.0800	0.0640	0.0646		
2,4-Dimethylphenol	0.0800	0.0800	0.0407	0.0411		
2,4-Dinitrophenol	0.160	0.160	0.126	0.129		
2,4-Dinitrotoluene	0.0800	0.0800	0.0733	0.0734		
2,6-Dinitrotoluene	0.0800	0.0800	0.0710	0.0725		
2-Chloronaphthalene	0.0800	0.0800	0.0584	0.0597		
2-Chlorophenol	0.0800	0.0800	0.0628	0.0626		
2-Methylphenol	0.0800	0.0800	0.0603	0.0604		
2-Nitrophenol	0.0800	0.0800	0.0655	0.0654		
3,3'-Dichlorobenzidine	0.0800	0.0800	0.0337 J	0.0358 J		
4,6-Dinitro-2-methylphenol	0.160	0.160	0.133	0.136		
4-Bromophenyl phenyl ether	0.0800	0.0800	0.0636	0.0659		
4-Chloro-3-methylphenol	0.0800	0.0800	0.0630	0.0637		
4-Chlorophenyl phenyl ether	0.0800	0.0800	0.0647	0.0665		
4-Nitrophenol	0.160	0.160	0.141	0.139		
Acenaphthene	0.0800	0.0800	0.0600	0.0611		
Acenaphthylene	0.0800	0.0800	0.0574	0.0584		
Anthracene	0.0800	0.0800	0.0616	0.0629		
Benzidine	0.0800	0.0800	ND	ND		
Benzo[a]anthracene	0.0800	0.0800	0.0636	0.0652		
Benzo[a]pyrene	0.0800	0.0800	0.0624	0.0643		
Benzo[b]fluoranthene	0.0800	0.0800	0.0662	0.0681		
Benzo[g,h,i]perylene	0.0800	0.0800	0.0651	0.0668		
Benzo[k]fluoranthene	0.0800	0.0800	0.0687	0.0690		
Bis(2-chloroethoxy)methane	0.0800	0.0800	0.0627	0.0620		
Bis(2-chloroethyl)ether	0.0800	0.0800	0.0629	0.0626		
Bis(2-ethylhexyl) phthalate	0.0800	0.0800	0.0620	0.0637		
Butyl benzyl phthalate	0.0800	0.0800	0.0608	0.0629		
Chrysene	0.0800	0.0800	0.0648	0.0662		
Dibenz(a,h)anthracene	0.0800	0.0800	0.0658	0.0671		
Diethyl phthalate	0.0800	0.0800	0.0673	0.0676		
Dimethyl phthalate	0.0800	0.0800	0.0683	0.0686		
Di-n-butyl phthalate	0.0800	0.0800	0.0634	0.0643		

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Laboratory Control/ Laboratory Duplicate Data Report - Batch: 280-212319

Method: 625
Preparation: 625

LCS Lab Sample ID:	LCS 280-212319/2-A	Units:	mg/L	LCS Lab Sample ID:	LCSD 280-212319/3-A
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	02/14/2014 1307			Analysis Date:	02/14/2014 1337
Prep Date:	02/10/2014 1715			Prep Date:	02/10/2014 1715
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual		
Di-n-octyl phthalate	0.0800	0.0800	0.0574	0.0595		
Fluoranthene	0.0800	0.0800	0.0651	0.0659		
Fluorene	0.0800	0.0800	0.0641	0.0649		
Hexachlorobenzene	0.0800	0.0800	0.0661	0.0665		
Hexachlorobutadiene	0.0800	0.0800	0.0438	0.0428		
Hexachlorocyclopentadiene	0.0800	0.0800	0.00566 J *	0.00584 J *		
Hexachloroethane	0.0800	0.0800	0.0389	0.0365		
Indeno[1,2,3-cd]pyrene	0.0800	0.0800	0.0595	0.0618		
Isophorone	0.0800	0.0800	0.0598	0.0600		
Naphthalene	0.0800	0.0800	0.0539	0.0542		
n-Decane	0.0800	0.0800	0.0309	0.0274		
Nitrobenzene	0.0800	0.0800	0.0614	0.0614		
N-Nitrosodimethylamine	0.0800	0.0800	0.0612	0.0604		
N-Nitrosodi-n-propylamine	0.0800	0.0800	0.0605	0.0604		
N-Nitrosodiphenylamine	0.0800	0.0800	0.0587	0.0601		
p-Cresol	0.0800	0.0800	0.0605	0.0609		
Pentachlorophenol	0.160	0.160	0.141	0.140		
Phenanthrene	0.0800	0.0800	0.0634	0.0644		
Phenol	0.0800	0.0800	0.0626	0.0633		
Pyrene	0.0800	0.0800	0.0636	0.0651		

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Method Blank - Batch: 440-162302**Method: 218.6****Preparation: N/A**

Lab Sample ID:	MB 440-162302/3	Analysis Batch:	440-162302	Instrument ID:	IC-22
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	MB.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	02/14/2014 1126	Units:	ug/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	1 mL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Chromium, hexavalent	ND		0.25	1.0

Method Reporting Limit Check - Batch: 440-162302**Method: 218.6****Preparation: N/A**

Lab Sample ID:	MRL 440-162302/4	Analysis Batch:	440-162302	Instrument ID:	IC-22
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	mrl.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	02/14/2014 1139	Units:	ug/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	1 mL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chromium, hexavalent	1.00	1.05	105	50 - 150	

Lab Control Sample - Batch: 440-162302**Method: 218.6****Preparation: N/A**

Lab Sample ID:	LCS 440-162302/6	Analysis Batch:	440-162302	Instrument ID:	IC-22
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	440-0036293-006.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	02/14/2014 1222	Units:	ug/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	1 mL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chromium, hexavalent	50.0	50.8	102	90 - 110	

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 440-162302

Method: 218.6
Preparation: N/A

MS Lab Sample ID:	440-70361-A-1 MS	Analysis Batch:	440-162302	Instrument ID:	IC-22
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	280-51935-i-1 MS.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	02/14/2014 1911			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	1 mL
Leach Date:	N/A				

MSD Lab Sample ID:	440-70361-A-1 MSD	Analysis Batch:	440-162302	Instrument ID:	IC-22
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	280-51935-i-1 MSD.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	02/14/2014 1924			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	1 mL
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Chromium, hexavalent	99	101	90 - 110	2	10		

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 440-162302

Method: 218.6
Preparation: N/A

MS Lab Sample ID:	440-70361-A-1 MS	Units:	ug/L	MSD Lab Sample ID:	440-70361-A-1 MSD
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	02/14/2014 1911			Analysis Date:	02/14/2014 1924
Prep Date:	N/A			Prep Date:	N/A
Leach Date:	N/A			Leach Date:	N/A

Analyte	Sample	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
	Result/Qual				
Chromium, hexavalent	8.1	50.0	50.0	57.7	58.6

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Method Blank - Batch: 280-212104**Method: 200.7 Rev 4.4****Preparation: 200.7****Total Recoverable**

Lab Sample ID:	MB 280-212104/1-A	Analysis Batch:	280-212571	Instrument ID:	MT_025
Client Matrix:	Water	Prep Batch:	280-212104	Lab File ID:	25A8021114.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	02/12/2014 0346	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	02/11/2014 0730				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Arsenic	ND		0.0044	0.015
Cadmium	ND		0.00045	0.0050
Iron	ND		0.022	0.10
Lead	ND		0.0026	0.0090
Selenium	ND		0.0049	0.015
Zinc	0.00578	J	0.0045	0.020
Silver	ND		0.00093	0.010

Lab Control Sample - Batch: 280-212104**Method: 200.7 Rev 4.4****Preparation: 200.7****Total Recoverable**

Lab Sample ID:	LCS 280-212104/2-A	Analysis Batch:	280-212571	Instrument ID:	MT_025
Client Matrix:	Water	Prep Batch:	280-212104	Lab File ID:	25A8021114.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	02/12/2014 0348	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	02/11/2014 0730				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Arsenic	1.00	0.931	93	88 - 110	
Cadmium	0.100	0.0986	99	88 - 111	
Iron	1.00	0.938	94	89 - 115	
Lead	0.500	0.463	93	89 - 110	
Selenium	2.00	1.88	94	85 - 112	
Zinc	0.500	0.483	97	85 - 111	
Silver	0.0500	0.0491	98	85 - 115	

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-212104**

Method: 200.7 Rev 4.4

Preparation: 200.7

Total Recoverable

MS Lab Sample ID:	280-51934-A-1-B MS	Analysis Batch:	280-212571	Instrument ID:	MT_025
Client Matrix:	Water	Prep Batch:	280-212104	Lab File ID:	25A8021114.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	02/12/2014 0413			Final Weight/Volume:	50 mL
Prep Date:	02/11/2014 0730				
Leach Date:	N/A				

MSD Lab Sample ID:	280-51934-A-1-C MSD	Analysis Batch:	280-212571	Instrument ID:	MT_025
Client Matrix:	Water	Prep Batch:	280-212104	Lab File ID:	25A8021114.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	02/12/2014 0416			Final Weight/Volume:	50 mL
Prep Date:	02/11/2014 0730				
Leach Date:	N/A				

Analyte	% Rec.						
	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Arsenic	96	101	88 - 110	5	20		
Cadmium	100	106	88 - 111	5	20		
Iron	70	92	89 - 115	6	20		F1
Lead	85	89	89 - 110	4	20		F1
Selenium	95	100	85 - 112	6	20		
Zinc	91	96	85 - 111	4	20		
Silver	103	109	85 - 115	6	20		

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-212104**

Method: 200.7 Rev 4.4

Preparation: 200.7

Total Recoverable

MS Lab Sample ID:	280-51934-A-1-B MS	Units:	mg/L	MSD Lab Sample ID:	280-51934-A-1-C MSD
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	02/12/2014 0413			Analysis Date:	02/12/2014 0416
Prep Date:	02/11/2014 0730			Prep Date:	02/11/2014 0730
Leach Date:	N/A			Leach Date:	N/A

Analyte	Sample		MS Spike	MSD Spike	MS	MSD
	Result/Qual	Amount	Amount	Amount	Result/Qual	Result/Qual
Arsenic	0.012	J	1.00	1.00	0.971	1.02
Cadmium	0.0013	J	0.100	0.100	0.102	0.107
Iron	2.5		1.00	1.00	3.20	F1
Lead	ND		0.500	0.500	0.425	F1
Selenium	ND		2.00	2.00	1.89	2.01
Zinc	0.13		0.500	0.500	0.587	0.613
Silver	ND		0.0500	0.0500	0.0513	0.0543

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Method Blank - Batch: 280-212435

Method: 245.1

Preparation: 245.1

Lab Sample ID:	MB 280-212435/1-A	Analysis Batch:	280-212634	Instrument ID:	MT_034
Client Matrix:	Water	Prep Batch:	280-212435	Lab File ID:	140211taa.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30 mL
Analysis Date:	02/11/2014 1701	Units:	mg/L	Final Weight/Volume:	30 mL
Prep Date:	02/11/2014 1230				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Mercury	ND		0.000027	0.00020

Lab Control Sample - Batch: 280-212435

Method: 245.1

Preparation: 245.1

Lab Sample ID:	LCS 280-212435/2-A	Analysis Batch:	280-212634	Instrument ID:	MT_034
Client Matrix:	Water	Prep Batch:	280-212435	Lab File ID:	140211taa.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30 mL
Analysis Date:	02/11/2014 1703	Units:	mg/L	Final Weight/Volume:	30 mL
Prep Date:	02/11/2014 1230				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.00500	0.00502	100	90 - 110	

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 280-212435

Method: 245.1

Preparation: 245.1

MS Lab Sample ID:	280-51935-1	Analysis Batch:	280-212634	Instrument ID:	MT_034
Client Matrix:	Water	Prep Batch:	280-212435	Lab File ID:	140211taa.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30 mL
Analysis Date:	02/11/2014 1710			Final Weight/Volume:	30 mL
Prep Date:	02/11/2014 1230				
Leach Date:	N/A				

MSD Lab Sample ID:	280-51935-1	Analysis Batch:	280-212634	Instrument ID:	MT_034
Client Matrix:	Water	Prep Batch:	280-212435	Lab File ID:	140211taa.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30 mL
Analysis Date:	02/11/2014 1712			Final Weight/Volume:	30 mL
Prep Date:	02/11/2014 1230				
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Mercury	99	99	80 - 120	0	10		

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 280-212435

Method: 245.1
Preparation: 245.1

MS Lab Sample ID:	280-51935-1	Units:	mg/L	MSD Lab Sample ID:	280-51935-1
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	02/11/2014 1710			Analysis Date:	02/11/2014 1712
Prep Date:	02/11/2014 1230			Prep Date:	02/11/2014 1230
Leach Date:	N/A			Leach Date:	N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Mercury	ND	0.00500	0.00500	0.00495	0.00493

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Method Blank - Batch: 280-213068

Method: 1664A

Preparation: 1664A

Lab Sample ID:	MB 280-213068/1-A	Analysis Batch:	280-213132	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	280-213068	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	02/14/2014 1520	Units:	mg/L	Final Weight/Volume:	1000 mL
Prep Date:	02/14/2014 0943				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
HEM	ND		1.6	5.0

Lab Control Sample/ Lab Control Sample Duplicate Recovery Report - Batch: 280-213068

Method: 1664A

Preparation: 1664A

LCS Lab Sample ID:	LCS 280-213068/2-A	Analysis Batch:	280-213132	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	280-213068	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	02/14/2014 1520	Units:	mg/L	Final Weight/Volume:	1000 mL
Prep Date:	02/14/2014 0943				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-213068/3-A	Analysis Batch:	280-213132	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	280-213068	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	02/14/2014 1520	Units:	mg/L	Final Weight/Volume:	1000 mL
Prep Date:	02/14/2014 0943				
Leach Date:	N/A				

Analyte	% Rec.		RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD				
HEM	91	93	81 - 107	3	22	

Laboratory Control/ Laboratory Duplicate Data Report - Batch: 280-213068

Method: 1664A

Preparation: 1664A

LCS Lab Sample ID:	LCS 280-213068/2-A	Units:	mg/L	LCSD Lab Sample ID:	LCSD 280-213068/3-A
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	02/14/2014 1520			Analysis Date:	02/14/2014 1520
Prep Date:	02/14/2014 0943			Prep Date:	02/14/2014 0943
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
HEM	40.0	40.0	36.4	37.4

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Method Blank - Batch: 280-212560

Method: 350.1

Preparation: N/A

Lab Sample ID:	MB 280-212560/21	Analysis Batch:	280-212560	Instrument ID:	WC_AlP 3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E:\FLOW_4\021114.RST
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	02/11/2014 1213	Units:	mg/L	Final Weight/Volume:	10 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Ammonia	ND		0.022	0.10

Lab Control Sample/ Lab Control Sample Duplicate Recovery Report - Batch: 280-212560

Method: 350.1

Preparation: N/A

LCS Lab Sample ID:	LCS 280-212560/19	Analysis Batch:	280-212560	Instrument ID:	WC_AlP 3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E:\FLOW_4\021114.RST
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	02/11/2014 1209	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-212560/20	Analysis Batch:	280-212560	Instrument ID:	WC_AlP 3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E:\FLOW_4\021114.RST
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	02/11/2014 1211	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	% Rec.		RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD				
Ammonia	99	99	90 - 110	0	10	

Laboratory Control/ Laboratory Duplicate Data Report - Batch: 280-212560

Method: 350.1

Preparation: N/A

LCS Lab Sample ID:	LCS 280-212560/19	Units:	mg/L	LCSD Lab Sample ID:	LCSD 280-212560/20
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	02/11/2014 1209			Analysis Date:	02/11/2014 1211
Prep Date:	N/A			Prep Date:	N/A
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Ammonia	2.50	2.50	2.47	2.47

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Method Blank - Batch: 280-212538

Method: 351.2

Preparation: 351.2

Lab Sample ID:	MB 280-212538/3-A	Analysis Batch:	280-212772	Instrument ID:	WC_Astoria
Client Matrix:	Water	Prep Batch:	280-212538	Lab File ID:	021214TKN.tab
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	25 mL
Analysis Date:	02/12/2014 2040	Units:	mg/L	Final Weight/Volume:	25 mL
Prep Date:	02/11/2014 2132				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Nitrogen, Kjeldahl	ND		0.18	0.50

Laboratory Control Sample/ Laboratory Control Sample Duplicate Recovery Report - Batch: 280-212538

Method: 351.2

Preparation: 351.2

LCS Lab Sample ID:	LCS 280-212538/1-A	Analysis Batch:	280-212772	Instrument ID:	WC_Astoria
Client Matrix:	Water	Prep Batch:	280-212538	Lab File ID:	021214TKN.tab
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	25 mL
Analysis Date:	02/12/2014 2038	Units:	mg/L	Final Weight/Volume:	25 mL
Prep Date:	02/11/2014 2132				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-212538/2-A	Analysis Batch:	280-212772	Instrument ID:	WC_Astoria
Client Matrix:	Water	Prep Batch:	280-212538	Lab File ID:	021214TKN.tab
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	25 mL
Analysis Date:	02/12/2014 2039	Units:	mg/L	Final Weight/Volume:	25 mL
Prep Date:	02/11/2014 2132				
Leach Date:	N/A				

Analyte	% Rec.		RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD				
Nitrogen, Kjeldahl	101	101	90 - 110	0	25	

Laboratory Control/ Laboratory Duplicate Data Report - Batch: 280-212538

Method: 351.2

Preparation: 351.2

LCS Lab Sample ID:	LCS 280-212538/1-A	Units:	mg/L	LCSD Lab Sample ID:	LCSD 280-212538/2-A
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	02/12/2014 2038			Analysis Date:	02/12/2014 2039
Prep Date:	02/11/2014 2132			Prep Date:	02/11/2014 2132
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Nitrogen, Kjeldahl	6.00	6.00	6.05	6.04

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 280-212538

**Method: 351.2
Preparation: 351.2**

MS Lab Sample ID:	280-51869-C-3-B MS	Analysis Batch:	280-212772	Instrument ID:	WC_Astoria
Client Matrix:	Water	Prep Batch:	280-212538	Lab File ID:	021214TKN.tab
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	25 mL
Analysis Date:	02/12/2014 2056			Final Weight/Volume:	25 mL
Prep Date:	02/11/2014 2132				
Leach Date:	N/A				

MSD Lab Sample ID:	280-51869-C-3-C MSD	Analysis Batch:	280-212772	Instrument ID:	WC_Astoria
Client Matrix:	Water	Prep Batch:	280-212538	Lab File ID:	021214TKN.tab
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	25 mL
Analysis Date:	02/12/2014 2058			Final Weight/Volume:	25 mL
Prep Date:	02/11/2014 2132				
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrogen, Kjeldahl	123	122	90 - 110	0	25	4	4

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 280-212538

**Method: 351.2
Preparation: 351.2**

MS Lab Sample ID:	280-51869-C-3-B MS	Units:	mg/L	MSD Lab Sample ID:	280-51869-C-3-C MSD
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	02/12/2014 2056			Analysis Date:	02/12/2014 2058
Prep Date:	02/11/2014 2132			Prep Date:	02/11/2014 2132
Leach Date:	N/A			Leach Date:	N/A

Analyte	Sample Result/Qual	MS Spike	MSD Spike	MS Result/Qual	MSD	MSD Result/Qual	
		Amount	Amount				
Nitrogen, Kjeldahl	14	3.00	3.00	17.8	4	17.8	4

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Method Blank - Batch: 280-212562

Method: 353.2

Preparation: N/A

Lab Sample ID:	MB 280-212562/28	Analysis Batch:	280-212562	Instrument ID:	WC_Alp 2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\0211NXNS.RS
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	02/11/2014 2153	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Nitrate Nitrite as N	ND		0.019	0.10

Method Reporting Limit Check - Batch: 280-212562

Method: 353.2

Preparation: N/A

Lab Sample ID:	MRL 280-212562/18	Analysis Batch:	280-212562	Instrument ID:	WC_Alp 2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\0211NXNS.RS
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	02/11/2014 2138	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate Nitrite as N	0.100	0.113	113	50 - 150	

Lab Control Sample/ Lab Control Sample Duplicate Recovery Report - Batch: 280-212562

Method: 353.2

Preparation: N/A

LCS Lab Sample ID:	LCS 280-212562/29	Analysis Batch:	280-212562	Instrument ID:	WC_Alp 2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\0211NXNS.RS
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	02/11/2014 2154	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-212562/30	Analysis Batch:	280-212562	Instrument ID:	WC_Alp 2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\0211NXNS.RS
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	02/11/2014 2156	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	% Rec.		RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD				
Nitrate Nitrite as N	104	100	90 - 110	3	10	

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

**Laboratory Control/
Laboratory Duplicate Data Report - Batch: 280-212562**

**Method: 353.2
Preparation: N/A**

LCS Lab Sample ID:	LCS 280-212562/29	Units:	mg/L	LCSD Lab Sample ID:	LCSD 280-212562/30
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	02/11/2014 2154			Analysis Date:	02/11/2014 2156
Prep Date:	N/A			Prep Date:	N/A
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Nitrate Nitrite as N	5.00	5.00	5.18	5.02

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-212562**

**Method: 353.2
Preparation: N/A**

MS Lab Sample ID:	320-5869-B-2 MS	Analysis Batch:	280-212562	Instrument ID:	WC_Alp 2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\0211NXNS.RS
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	02/11/2014 2208			Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

MSD Lab Sample ID:	320-5869-B-2 MSD	Analysis Batch:	280-212562	Instrument ID:	WC_Alp 2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\0211NXNS.RS
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	02/11/2014 2209			Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate Nitrite as N	99	102	90 - 110	3	10		

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-212562**

**Method: 353.2
Preparation: N/A**

MS Lab Sample ID:	320-5869-B-2 MS	Units:	mg/L	MSD Lab Sample ID:	320-5869-B-2 MSD
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	02/11/2014 2208			Analysis Date:	02/11/2014 2209
Prep Date:	N/A			Prep Date:	N/A
Leach Date:	N/A			Leach Date:	N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Nitrate Nitrite as N	0.081 J	4.00	4.00	4.04	4.16

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Method Blank - Batch: 280-212492**Method: 365.1****Preparation: 365.2/365.3/365**

Lab Sample ID:	MB 280-212492/5-A	Analysis Batch:	280-212561	Instrument ID:	WC_Konelab
Client Matrix:	Water	Prep Batch:	280-212492	Lab File ID:	021114TPHOS.xls
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	02/11/2014 2249	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	02/11/2014 1604				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Phosphorus, Total	ND		0.0050	0.050

Laboratory Control Sample/**Laboratory Control Sample Duplicate Recovery Report - Batch: 280-212492****Method: 365.1****Preparation: 365.2/365.3/365**

LCS Lab Sample ID:	LCS 280-212492/3-A	Analysis Batch:	280-212561	Instrument ID:	WC_Konelab
Client Matrix:	Water	Prep Batch:	280-212492	Lab File ID:	021114TPHOS.xls
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	02/11/2014 2249	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	02/11/2014 1604				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-212492/4-A	Analysis Batch:	280-212561	Instrument ID:	WC_Konelab
Client Matrix:	Water	Prep Batch:	280-212492	Lab File ID:	021114TPHOS.xls
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	02/11/2014 2249	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	02/11/2014 1604				
Leach Date:	N/A				

Analyte	% Rec.		RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD				
Phosphorus, Total	96	96	90 - 110	0	10	

Laboratory Control/**Laboratory Duplicate Data Report - Batch: 280-212492****Method: 365.1****Preparation: 365.2/365.3/365**

LCS Lab Sample ID:	LCS 280-212492/3-A	Units:	mg/L	LCSD Lab Sample ID:	LCSD 280-212492/4-A
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	02/11/2014 2249			Analysis Date:	02/11/2014 2249
Prep Date:	02/11/2014 1604			Prep Date:	02/11/2014 1604
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Phosphorus, Total	0.500	0.500	0.478	0.478

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 280-212492

Method: 365.1
Preparation: 365.2/365.3/365

MS Lab Sample ID:	280-51928-F-3-B MS	Analysis Batch:	280-212561	Instrument ID:	WC_Konelab
Client Matrix:	Water	Prep Batch:	280-212492	Lab File ID:	021114TPHOS.xls
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	02/11/2014 2312			Final Weight/Volume:	50 mL
Prep Date:	02/11/2014 1604				
Leach Date:	N/A				

MSD Lab Sample ID:	280-51928-F-3-C MSD	Analysis Batch:	280-212561	Instrument ID:	WC_Konelab
Client Matrix:	Water	Prep Batch:	280-212492	Lab File ID:	021114TPHOS.xls
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	02/11/2014 2312			Final Weight/Volume:	50 mL
Prep Date:	02/11/2014 1604				
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Phosphorus, Total	93	94	90 - 110	0	10		

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 280-212492

Method: 365.1
Preparation: 365.2/365.3/365

MS Lab Sample ID:	280-51928-F-3-B MS	Units:	mg/L	MSD Lab Sample ID:	280-51928-F-3-C MSD
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	02/11/2014 2312			Analysis Date:	02/11/2014 2312
Prep Date:	02/11/2014 1604			Prep Date:	02/11/2014 1604
Leach Date:	N/A			Leach Date:	N/A

Analyte	Sample	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
	Result/Qual				
Phosphorus, Total	0.59	0.500	0.500	1.05	1.05

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Method Blank - Batch: 280-212585

Method: 410.4

Preparation: N/A

Lab Sample ID:	MB 280-212585/11	Analysis Batch:	280-212585	Instrument ID:	WC_HACH SPEC
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	2 mL
Analysis Date:	02/12/2014 0822	Units:	mg/L	Final Weight/Volume:	2 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Chemical Oxygen Demand	ND		4.1	20

Lab Control Sample/

Lab Control Sample Duplicate Recovery Report - Batch: 280-212585

Method: 410.4

Preparation: N/A

LCS Lab Sample ID:	LCS 280-212585/9	Analysis Batch:	280-212585	Instrument ID:	WC_HACH SPEC
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	02/12/2014 0822	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-212585/10	Analysis Batch:	280-212585	Instrument ID:	WC_HACH SPEC
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	02/12/2014 0822	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	% Rec.		RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD				
Chemical Oxygen Demand	104	106	90 - 110	2	11	

Laboratory Control/

Laboratory Duplicate Data Report - Batch: 280-212585

Method: 410.4

Preparation: N/A

LCS Lab Sample ID:	LCS 280-212585/9	Units:	mg/L	LCSD Lab Sample ID:	LCSD 280-212585/10
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	02/12/2014 0822			Analysis Date:	02/12/2014 0822
Prep Date:	N/A			Prep Date:	N/A
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Chemical Oxygen Demand	100	100	104	106

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 280-212585

Method: 410.4
Preparation: N/A

MS Lab Sample ID:	280-51738-B-2 MS	Analysis Batch:	280-212585	Instrument ID:	WC_HACH SPEC
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	2.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	02/12/2014 0822			Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

MSD Lab Sample ID:	280-51738-B-2 MSD	Analysis Batch:	280-212585	Instrument ID:	WC_HACH SPEC
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	2.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	02/12/2014 0822			Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Chemical Oxygen Demand	-2	41	90 - 110	15	11	F1	F1 F2

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 280-212585

Method: 410.4
Preparation: N/A

MS Lab Sample ID:	280-51738-B-2 MS	Units:	mg/L	MSD Lab Sample ID:	280-51738-B-2 MSD
Client Matrix:	Water			Client Matrix:	Water
Dilution:	2.0			Dilution:	2.0
Analysis Date:	02/12/2014 0822			Analysis Date:	02/12/2014 0822
Prep Date:	N/A			Prep Date:	N/A
Leach Date:	N/A			Leach Date:	N/A

Analyte	Sample Result/Qual	MS Spike	MSD Spike	MS Result/Qual	MSD
		Amount	Amount		Result/Qual
Chemical Oxygen Demand	270	100	100	269 F1	311 F1 F2

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Method Blank - Batch: 280-212142

Method: SM 2540D

Preparation: N/A

Lab Sample ID:	MB 280-212142/3	Analysis Batch:	280-212142	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250 mL
Analysis Date:	02/08/2014 1035	Units:	mg/L	Final Weight/Volume:	250 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Total Suspended Solids	ND		1.1	4.0

Lab Control Sample/ Lab Control Sample Duplicate Recovery Report - Batch: 280-212142

Method: SM 2540D

Preparation: N/A

LCS Lab Sample ID:	LCS 280-212142/1	Analysis Batch:	280-212142	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	02/08/2014 1035	Units:	mg/L	Final Weight/Volume:	250 mL
Prep Date:	N/A				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-212142/2	Analysis Batch:	280-212142	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	02/08/2014 1035	Units:	mg/L	Final Weight/Volume:	250 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	LCS	LCSD	% Rec.	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Total Suspended Solids	91	96	96	86 - 114	5	20		

Laboratory Control/ Laboratory Duplicate Data Report - Batch: 280-212142

Method: SM 2540D

Preparation: N/A

LCS Lab Sample ID:	LCS 280-212142/1	Units:	mg/L	LCS Lab Sample ID:	LCSD 280-212142/2
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	02/08/2014 1035			Analysis Date:	02/08/2014 1035
Prep Date:	N/A			Prep Date:	N/A
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Total Suspended Solids	100	100	91.0	96.0

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Duplicate - Batch: 280-212142

Method: SM 2540D

Preparation: N/A

Lab Sample ID:	280-51935-1	Analysis Batch:	280-212142	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	02/08/2014 1035	Units:	mg/L	Final Weight/Volume:	250 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Suspended Solids	82	81.0	1	10	

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Method Blank - Batch: 280-213248

Method: Total Nitrogen

Preparation: N/A

Lab Sample ID:	MB 280-213248/1	Analysis Batch:	280-213248	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	02/17/2014 0820	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Nitrogen, Total	ND		0.042	0.10

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Laboratory Chronicle

Lab ID: 280-51935-1

Client ID: DB01E

Sample Date/Time: 02/04/2014 10:55 Received Date/Time: 02/07/2014 10:20

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:625	280-51935-E-1-A	280-213417	280-212319	02/10/2014 17:15	1	TAL DEN	BWJ	
A:625	280-51935-E-1-A	280-213417	280-212319	02/19/2014 00:13	1	TAL DEN	DCK	
A:218.6	280-51935-I-1	440-162302		02/14/2014 19:50	1	TAL IRV	RW	
P:200.7	280-51935-H-1-A	280-212571	280-212104	02/11/2014 07:30	1	TAL DEN	WAW	
A:200.7 Rev 4.4	280-51935-H-1-A	280-212571	280-212104	02/12/2014 04:28	1	TAL DEN	JKH	
P:245.1	280-51935-H-1-B	280-212634	280-212435	02/11/2014 12:30	1	TAL DEN	JM	
A:245.1	280-51935-H-1-B	280-212634	280-212435	02/11/2014 17:07	1	TAL DEN	JM	
P:1664A	280-51935-A-1-A	280-213132	280-213068	02/14/2014 09:43	1	TAL DEN	AFB	
A:1664A	280-51935-A-1-A	280-213132	280-213068	02/14/2014 15:20	1	TAL DEN	AFB	
A:350.1	280-51935-G-1	280-212560		02/11/2014 13:12	1	TAL DEN	SMG	
P:351.2	280-51935-B-1-A	280-212772	280-212538	02/11/2014 21:32	1	TAL DEN	MW1	
A:351.2	280-51935-B-1-A	280-212772	280-212538	02/12/2014 21:12	1	TAL DEN	MW1	
A:353.2	280-51935-A-1	280-212562		02/11/2014 22:18	1	TAL DEN	DVA	
P:365.2/365.3/365	280-51935-F-1-A	280-212561	280-212492	02/11/2014 16:04	1	TAL DEN	AJS	
A:365.1	280-51935-F-1-A	280-212561	280-212492	02/11/2014 23:14	1	TAL DEN	AJS	
A:410.4	280-51935-G-1	280-212585		02/12/2014 08:22	1	TAL DEN	CCJ	
A:SM 2540D	280-51935-C-1	280-212142		02/08/2014 10:35	1	TAL DEN	MW1	
A:Total Nitrogen	280-51935-A-1	280-213248		02/17/2014 08:20	1	TAL DEN	RKS	
A:Field Sampling	280-51935-A-1	280-212236		02/04/2014 10:55	1	TAL DEN	FS	

Lab ID: 280-51935-1 MS

Client ID: DB01E

Sample Date/Time: 02/04/2014 10:55 Received Date/Time: 02/07/2014 10:20

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:245.1	280-51935-H-1-C MS	280-212634	280-212435	02/11/2014 12:30	1	TAL DEN	JM	
A:245.1	280-51935-H-1-C MS	280-212634	280-212435	02/11/2014 17:10	1	TAL DEN	JM	

Lab ID: 280-51935-1 MSD

Client ID: DB01E

Sample Date/Time: 02/04/2014 10:55 Received Date/Time: 02/07/2014 10:20

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:245.1	280-51935-H-1-D MSD	280-212634	280-212435	02/11/2014 12:30	1	TAL DEN	JM	
A:245.1	280-51935-H-1-D MSD	280-212634	280-212435	02/11/2014 17:12	1	TAL DEN	JM	

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Laboratory Chronicle

Lab ID: 280-51935-1 DU

Client ID: DB01E

Sample Date/Time: 02/04/2014 10:55 Received Date/Time: 02/07/2014 10:20

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:SM 2540D	280-51935-C-1 DU		280-212142		02/08/2014 10:35	1	TAL DEN	MW1

Lab ID: MB

Client ID: N/A

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:625	MB 280-212319/1-A	280-213417	280-212319	02/10/2014 17:15	1	TAL DEN	BWJ	
A:625	MB 280-212319/1-A	280-213417	280-212319	02/18/2014 21:41	1	TAL DEN	DCK	
A:218.6	MB 440-162302/3	440-162302		02/14/2014 11:26	1	TAL IRV	RW	
P:200.7	MB 280-212104/1-A	280-212571	280-212104	02/11/2014 07:30	1	TAL DEN	WAW	
A:200.7 Rev 4.4	MB 280-212104/1-A	280-212571	280-212104	02/12/2014 03:46	1	TAL DEN	JKH	
P:245.1	MB 280-212435/1-A	280-212634	280-212435	02/11/2014 12:30	1	TAL DEN	JM	
A:245.1	MB 280-212435/1-A	280-212634	280-212435	02/11/2014 17:01	1	TAL DEN	JM	
P:1664A	MB 280-213068/1-A	280-213132	280-213068	02/14/2014 09:43	1	TAL DEN	AFB	
A:1664A	MB 280-213068/1-A	280-213132	280-213068	02/14/2014 15:20	1	TAL DEN	AFB	
A:350.1	MB 280-212560/21	280-212560		02/11/2014 12:13	1	TAL DEN	SMG	
P:351.2	MB 280-212538/3-A	280-212772	280-212538	02/11/2014 21:32	1	TAL DEN	MW1	
A:351.2	MB 280-212538/3-A	280-212772	280-212538	02/12/2014 20:40	1	TAL DEN	MW1	
A:353.2	MB 280-212562/28	280-212562		02/11/2014 21:53	1	TAL DEN	DVA	
P:365.2/365.3/365.5	MB 280-212492/5-A	280-212561	280-212492	02/11/2014 16:04	1	TAL DEN	AJS	
A:365.1	MB 280-212492/5-A	280-212561	280-212492	02/11/2014 22:49	1	TAL DEN	AJS	
A:410.4	MB 280-212585/11	280-212585		02/12/2014 08:22	1	TAL DEN	CCJ	
A:SM 2540D	MB 280-212142/3	280-212142		02/08/2014 10:35	1	TAL DEN	MW1	
A:Total Nitrogen	MB 280-213248/1	280-213248		02/17/2014 08:20	1	TAL DEN	RKS	

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Laboratory Chronicle

Lab ID: LCS

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:625	LCS 280-212319/2-A	280-213067	280-212319	02/10/2014 17:15	1	TAL DEN	BWJ	
A:625	LCS 280-212319/2-A	280-213067	280-212319	02/14/2014 13:07	1	TAL DEN	DCK	
A:218.6	LCS 440-162302/6	440-162302		02/14/2014 12:22	1	TAL IRV	RW	
P:200.7	LCS 280-212104/2-A	280-212571	280-212104	02/11/2014 07:30	1	TAL DEN	WAW	
A:200.7 Rev 4.4	LCS 280-212104/2-A	280-212571	280-212104	02/12/2014 03:48	1	TAL DEN	JKH	
P:245.1	LCS 280-212435/2-A	280-212634	280-212435	02/11/2014 12:30	1	TAL DEN	JM	
A:245.1	LCS 280-212435/2-A	280-212634	280-212435	02/11/2014 17:03	1	TAL DEN	JM	
P:1664A	LCS 280-213068/2-A	280-213132	280-213068	02/14/2014 09:43	1	TAL DEN	AFB	
A:1664A	LCS 280-213068/2-A	280-213132	280-213068	02/14/2014 15:20	1	TAL DEN	AFB	
A:350.1	LCS 280-212560/19	280-212560		02/11/2014 12:09	1	TAL DEN	SMG	
P:351.2	LCS 280-212538/1-A	280-212772	280-212538	02/11/2014 21:32	1	TAL DEN	MW1	
A:351.2	LCS 280-212538/1-A	280-212772	280-212538	02/12/2014 20:38	1	TAL DEN	MW1	
A:353.2	LCS 280-212562/29	280-212562		02/11/2014 21:54	1	TAL DEN	DVA	
P:365.2/365.3/365	LCS 280-212492/3-A	280-212561	280-212492	02/11/2014 16:04	1	TAL DEN	AJS	
A:365.1	LCS 280-212492/3-A	280-212561	280-212492	02/11/2014 22:49	1	TAL DEN	AJS	
A:410.4	LCS 280-212585/9	280-212585		02/12/2014 08:22	1	TAL DEN	CCJ	
A:SM 2540D	LCS 280-212142/1	280-212142		02/08/2014 10:35	1	TAL DEN	MW1	

Lab ID: LCSD

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:625	LCSD 280-212319/3-A	280-213067	280-212319	02/10/2014 17:15	1	TAL DEN	BWJ	
A:625	LCSD 280-212319/3-A	280-213067	280-212319	02/14/2014 13:37	1	TAL DEN	DCK	
P:1664A	LCSD 280-213068/3-A	280-213132	280-213068	02/14/2014 09:43	1	TAL DEN	AFB	
A:1664A	LCSD 280-213068/3-A	280-213132	280-213068	02/14/2014 15:20	1	TAL DEN	AFB	
A:350.1	LCSD 280-212560/20	280-212560		02/11/2014 12:11	1	TAL DEN	SMG	
P:351.2	LCSD 280-212538/2-A	280-212772	280-212538	02/11/2014 21:32	1	TAL DEN	MW1	
A:351.2	LCSD 280-212538/2-A	280-212772	280-212538	02/12/2014 20:39	1	TAL DEN	MW1	
A:353.2	LCSD 280-212562/30	280-212562		02/11/2014 21:56	1	TAL DEN	DVA	
P:365.2/365.3/365	LCSD 280-212492/4-A	280-212561	280-212492	02/11/2014 16:04	1	TAL DEN	AJS	
A:365.1	LCSD 280-212492/4-A	280-212561	280-212492	02/11/2014 22:49	1	TAL DEN	AJS	
A:410.4	LCSD 280-212585/10	280-212585		02/12/2014 08:22	1	TAL DEN	CCJ	
A:SM 2540D	LCSD 280-212142/2	280-212142		02/08/2014 10:35	1	TAL DEN	MW1	

Quality Control Results

Client: Waste Management

Job Number: 280-51935-1

Laboratory Chronicle

Lab ID: MRL

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:218.6	MRL 440-162302/4		440-162302		02/14/2014 11:39	1	TAL IRV	RW
A:353.2	MRL 280-212562/18		280-212562		02/11/2014 21:38	1	TAL DEN	DVA

Lab ID: MS

Client ID: N/A

Sample Date/Time: 02/12/2014 10:25

Received Date/Time: 02/13/2014 09:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:218.6	440-70361-A-1 MS		440-162302		02/14/2014 19:11	1	TAL IRV	RW
P:200.7	280-51934-A-1-B MS		280-212571	280-212104	02/11/2014 07:30	1	TAL DEN	WAW
A:200.7 Rev 4.4	280-51934-A-1-B MS		280-212571	280-212104	02/12/2014 04:13	1	TAL DEN	JKH
P:351.2	280-51869-C-3-B MS		280-212772	280-212538	02/11/2014 21:32	1	TAL DEN	MW1
A:351.2	280-51869-C-3-B MS		280-212772	280-212538	02/12/2014 20:56	1	TAL DEN	MW1
A:353.2	320-5869-B-2 MS		280-212562		02/11/2014 22:08	1	TAL DEN	DVA
P:365.2/365.3/365	280-51928-F-3-B MS		280-212561	280-212492	02/11/2014 16:04	1	TAL DEN	AJS
A:365.1	280-51928-F-3-B MS		280-212561	280-212492	02/11/2014 23:12	1	TAL DEN	AJS
A:410.4	280-51738-B-2 MS		280-212585		02/12/2014 08:22	2	TAL DEN	CCJ

Lab ID: MSD

Client ID: N/A

Sample Date/Time: 02/12/2014 10:25

Received Date/Time: 02/13/2014 09:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:218.6	440-70361-A-1 MSD		440-162302		02/14/2014 19:24	1	TAL IRV	RW
P:200.7	280-51934-A-1-C MSD		280-212571	280-212104	02/11/2014 07:30	1	TAL DEN	WAW
A:200.7 Rev 4.4	280-51934-A-1-C MSD		280-212571	280-212104	02/12/2014 04:16	1	TAL DEN	JKH
P:351.2	280-51869-C-3-C MSD		280-212772	280-212538	02/11/2014 21:32	1	TAL DEN	MW1
A:351.2	280-51869-C-3-C MSD		280-212772	280-212538	02/12/2014 20:58	1	TAL DEN	MW1
A:353.2	320-5869-B-2 MSD		280-212562		02/11/2014 22:09	1	TAL DEN	DVA
P:365.2/365.3/365	280-51928-F-3-C MSD		280-212561	280-212492	02/11/2014 16:04	1	TAL DEN	AJS
A:365.1	280-51928-F-3-C MSD		280-212561	280-212492	02/11/2014 23:12	1	TAL DEN	AJS
A:410.4	280-51738-B-2 MSD		280-212585		02/12/2014 08:22	2	TAL DEN	CCJ

Lab References:

TAL DEN = TestAmerica Denver

TAL IRV = TestAmerica Irvine

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Honolulu

1946 Young St. Suite 400A

Honolulu, HI 96826

Tel: 808-486-5227

TestAmerica Job ID: HXB0012

Client Project/Site: 60246625.02

Client Project Description: AECOM, W GSL STORMWATER

For:

TestAmerica Denver

4955 Yarrow Street

Arvada, CO 80002

Attn: Betsy Sara



Authorized for release by:

2/17/2014 9:29:38 AM

Kristie Reilly, Project Manager

808-486-5227

Kristie.Brachmann@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: TestAmerica Denver
Project/Site: 60246625.02

TestAmerica Job ID: HXB0012

Qualifiers

WetChem

Qualifier	Qualifier Description
A5	Incubator/water bath temperature was outside method requirements.

Glossary

Abbreviation These commonly used abbreviations may or may not be present in this report.

□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

1

2

3

4

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10

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12

13

Case Narrative

Client: TestAmerica Denver
Project/Site: 60246625.02

TestAmerica Job ID: HXB0012

Job ID: HXB0012

Laboratory: TestAmerica Honolulu

Narrative

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory unless otherwise stated in the report. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. TestAmerica Analytical Testing Corporation certifies that the analytical results contained herein apply only to the specific sample(s) analyzed.

The Chain(s) of Custody are included and are an integral part of this report. This entire report was reviewed and approved for release.

If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-(808)486-5227

LABORATORY REPORT

At sample receipt, the cooler/sample was 2 degrees C.

NELAC states that samples which require thermal preservation shall be considered acceptable if the arrival temperature is within 2 degrees C of the required temperature or the method specified range. For samples with a temperature requirement of 4 degrees C, an arrival temperature from 0 degrees C to 6 degrees C meets specifications. Samples that are delivered to the laboratory on the same day that they are collected may not meet these criteria. In these cases, the samples are considered acceptable if there is evidence that the chilling process has begun, such as arrival on ice.

The reported results were obtained in compliance with the 2003 NELAC standards unless otherwise noted.

The temperature for the incubator for BOD batch 14B0003 containing sample HXB0012-01 was out of acceptance range by 1°C. The temperature went up to 22°C and the accepted range is 19-21°C. Samples could not be reanalyzed due to holding time and method criteria. All other QA/QC was within acceptance range.

Sample Summary

Client: TestAmerica Denver
Project/Site: 60246625.02

TestAmerica Job ID: HXB0012

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
HXB0012-01	DB01E	Water - NonPotable	02/04/14 10:55	02/04/14 13:50

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TestAmerica Honolulu

Detection Summary

Client: TestAmerica Denver
Project/Site: 60246625.02

TestAmerica Job ID: HXB0012

Client Sample ID: DB01E

Lab Sample ID: HXB0012-01

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
BOD - 5 Day	3.10	A5	2.00		mg/L	1.00		SM5210B	Total

This Detection Summary does not include radiochemical test results.

TestAmerica Honolulu

Client Sample Results

Client: TestAmerica Denver
Project/Site: 60246625.02

TestAmerica Job ID: HXB0012

Client Sample ID: DB01E
Date Collected: 02/04/14 10:55
Date Received: 02/04/14 13:50

Lab Sample ID: HXB0012-01
Matrix: Water - NonPotable

Method: SM5210B - General Chemistry Parameters

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
BOD - 5 Day	3.10	A5	2.00		mg/L		02/05/14 15:05	02/10/14 15:22	1.00

QC Sample Results

Client: TestAmerica Denver
Project/Site: 60246625.02

TestAmerica Job ID: HXB0012

Method: SM5210B - General Chemistry Parameters

Lab Sample ID: 14B0003-BLK1

Matrix: Water - NonPotable

Analysis Batch: 14B0003

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 14B0003_P

Analyte	Blank	Blank	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
BOD - 5 Day	ND	A5	2.00		mg/L		02/05/14 14:29	02/10/14 14:35	1.00

Lab Sample ID: 14B0003-BS1

Matrix: Water - NonPotable

Analysis Batch: 14B0003

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 14B0003_P

Analyte	Spike	LCS	LCS	Unit	D	%Rec	Limits	RPD
	Added	Result	Qualifier					
BOD - 5 Day	198	186	A5	mg/L		94	85 - 115	

Lab Sample ID: 14B0003-DUP1

Matrix: Water - NonPotable

Analysis Batch: 14B0003

Client Sample ID: Duplicate

Prep Type: Total

Prep Batch: 14B0003_P

Analyte	Sample	Sample	Duplicate	Duplicate	Unit	D	RPD
	Result	Qualifier					
BOD - 5 Day	126		145	A5	mg/L		14

Limit 20

QC Association Summary

Client: TestAmerica Denver
Project/Site: 60246625.02

TestAmerica Job ID: HXB0012

WetChem

Analysis Batch: 14B0003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
14B0003-BLK1	Method Blank	Total	Water - NonPotable	SM5210B	14B0003_P
14B0003-BS1	Lab Control Sample	Total	Water - NonPotable	SM5210B	14B0003_P
14B0003-DUP1	Duplicate	Total	Water - NonPotable	SM5210B	14B0003_P
HXB0012-01	DB01E	Total	Water - NonPotable	SM5210B	14B0003_P

Prep Batch: 14B0003_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
14B0003-BLK1	Method Blank	Total	Water - NonPotable	Default Prep GenChem	14B0003_P
14B0003-BS1	Lab Control Sample	Total	Water - NonPotable	Default Prep GenChem	14B0003_P
14B0003-DUP1	Duplicate	Total	Water - NonPotable	Default Prep GenChem	14B0003_P
HXB0012-01	DB01E	Total	Water - NonPotable	Default Prep GenChem	14B0003_P

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Lab Chronicle

Client: TestAmerica Denver
Project/Site: 60246625.02

TestAmerica Job ID: HXB0012

Client Sample ID: DB01E

Lab Sample ID: HXB0012-01

Date Collected: 02/04/14 10:55

Matrix: Water - NonPotable

Date Received: 02/04/14 13:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	Default Prep GenChem		1.00	14B0003_P	02/05/14 15:05	KR	TAL HON
Total	Analysis	SM5210B		1.00	14B0003	02/10/14 15:22	KR	TAL HON

Laboratory References:

TAL HON = TestAmerica Honolulu, 1946 Young St. Suite 400A, Honolulu, HI 96826, TEL 808-486-5227

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Certification Summary

Client: TestAmerica Denver
Project/Site: 60246625.02

TestAmerica Job ID: HXB0012

Laboratory: TestAmerica Honolulu

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Florida	NELAP	4	E87907	06-30-14
Hawaii	State Program	9	N/A	06-28-14
USDA	Federal		HON-S-206	01-31-15

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TestAmerica Honolulu

Method Summary

Client: TestAmerica Denver
Project/Site: 60246625.02

TestAmerica Job ID: HXB0012

Method	Method Description	Protocol	Laboratory
SM5210B	General Chemistry Parameters		TAL HON

Protocol References:

Laboratory References:

TAL HON = TestAmerica Honolulu, 1946 Young St. Suite 400A, Honolulu, HI 96826, TEL 808-486-5227

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TESTAMERICA DENVER

YR: 09
MT

LABORATORY USE ONLY
LAB JOB NO. **HXB0012**

LOCATION _____

CONTAINERS

Chain of Custody / Analysis Request Form

Project identification		Indicate analyses requested		Laboratory ID no.
Report to Mark Hofferbert	Job parts WGSI, Stormwater	Job number 60246625.02	Sample ID TSS SM2540D	HXB0012-01
Company name AECOM Technical Services, Inc.	Address 1001 Bishop St., Suite 1600	State HI	Sample ID 625 SVOCs*	
City Honolulu	Zip 96813	Phone 808-523-8874	Sample ID 1664 OligoCresce	
Sampled by Margie Thach	Received by Mark.Hofferbert@aecom.com, margie.thach@aecom.com	Expiry date 2 weeks	Sample ID 200.7, 245.1 Metals*	
Client sample ID		Method HCl	Delivery method varies	
Item no	COMP	GRAB	Water	
1	X	X	Wastewater	
2	X	X	Diluted water	
3			Strong acid	
4			Oil	
5			Sediment	
6			Soil	
7			Leachate	
8			Plants	
9			Residues	
10			Sludge	
Released by (initials)	Date / Site released	Delivery method	Received by (initials)	Date / time received
Michelle Wang	Hawaiian Islands	Mail	Janice	2/4/14 11:55

Comments: SVOCs: alpha-terpineol, benzoic acid, picloram, pentachlorophenol, phenol.
TA-HN-40 Analyze for As, Cd, Fe, Pb, Tg, Se, Ag, Zn.
free-Esalty Labs to analyze BOD (SM210) and presence/absence of TestAmerica Laboratories, Inc.
Mr. D-041414
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*Metals: As, Cd, Fe, Pb, Tg, Se, Ag, Zn

Please check one:
 Dispose by lab
 Return to client
 Archive

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2/17/2014

Destination Laboratory DinnerDestination Laboratory PM (if known) Betsy Sora

Drop Shipment Receipt Checklist

Client Name: AerowDate/ Time Received: 2/4/14 1350Received By: JWMatrices: AQCarrier: Cieu

Airbill# :

Shipping container/coolers in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Chain of Custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of Custody Signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Cooler opened at TestAmerica Honolulu?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers matched to COC at TestAmerica Honolulu?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Any sample containers obviously broken/damaged upon receipt?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Sample containers on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Type: <u>Wet</u>
Custody seals present? If so, location? (Cooler, sample containers?)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Custody seals intact?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Water - VOA Vials have Zero Headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials present: <input type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Checked: <input checked="" type="checkbox"/>
pH Adjusted? Yes	<input type="checkbox"/>	<input type="checkbox"/>	Final pH:
Encres / MI-VOC / 5035 Vials Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Sample Filtration Needed?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Filtered in Field: <input type="checkbox"/>
DODQSM / QAPP Project (if known)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Type: _____

Temperature Blank Present? Yes No Sample Container Temperature: 2 °CSamples drop shipped on ice? Yes No Type: _____

Date of drop shipment: _____

Comments/ Sampling Handling Notes:

TestA!

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280-51935 Chain of Custody

TESTAMERICA DENVER

LABORATORY USE ONLY

LAB JOB NO.

LOCATION

CONTAINERS

Chain of Custody / Analysis Request Form

Report to		Project Identification		Indicate analyses requested			
Mark Hofferbert		Job name WGSL Stormwater					
Company name AECOM Technical Services, Inc.		Job number 60246625.02					
Address 1001 Bishop St., Suite 1600		State HI					
City Honolulu		Zip 96813					
Phone# 808-523-8874		Fax 808-523-8950		Contact email address mark.hofferbert@aecom.com, margie.thach@aecom.com		Date results needed 2 weeks	
Sampler MHN, DV		# samples in shipment					
Client sample ID		Matrix	Sampling	Date	Time	No. of containers	Laboratory ID no.
DB01E		X	Preservation method Sludge	HCl	2/4/14 10:55:2	X	
DB01E		X	Preservation method Soil	varies 2/4/14 10:55:7	X	X	X
Item no.	Page 65 of 68						
Comments.* SVOCS: alpha-terpineol, benzoic acid, p-cresol, pentachlorophenol, phenol.	** Metals: As, Cd, Fe, Pb, Hg, Se, Ag, Zn						
Received by (print / sign)	Delivery method	Company / Agency affiliation	Date / time received	Condition noted			
<i>Michelle Wynn</i>	24/14 / 13:55	TestAmerica	2/4/14 11:35:0	<i>8-ut wet 22</i>			
<i>M. Wynn</i>	Wyn 1030 Friday		/	<i>/</i>			
Comments.* SVOCS: alpha-terpineol, benzoic acid, p-cresol, pentachlorophenol, phenol.	Please check one:						
	<input checked="" type="checkbox"/> Dispose by lab <input type="checkbox"/> Return to client <input type="checkbox"/> Archive						

Food Quality Labs to analyze BOD (S1M 5210) and preserve CrVI (218.6); report to TA-Denver (PM: Betsy Sara).

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 Distribution: White - TestAmerica Yellow - TestAmerica Pink - Client

FIELD INFORMATION FORM



Site Name:
Site No.:

WGSL Stormwater
Sample Point: D/B/01/E
Sample ID:

This Waste Management Field Information Form is Required

This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e., with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID

PURGE INFO												
	PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOL PURGED						
Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vol's Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vol's Purged. Mark changes, record field data, below.												
PURGE/SAMPLE EQUIPMENT	Purging and Sampling Equipment .. Dedicated: <input checked="" type="checkbox"/> Y or <input type="checkbox"/> N				Filter Device: <input checked="" type="checkbox"/> Y or <input type="checkbox"/> N 0.45 <input type="checkbox"/> or <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> (circle or fill in)							
	Purging Device	A- Submersible Pump B-Peristaltic Pump Sampling Device	D-Bailer E-Piston Pump F-Dipper/Bottle X-Other	A-In-line Disposable B-Pressure C-Vacuum X-Other								
				Sample Tube Type:	A-Teflon B-Stainless Steel	C-PVC D-Polypropylene	X-Other:					
WELL DATA	Well Elevation (at TOC)	(ft/msl)			Depth to Water (DTW) (from TOC)	(ft)			Groundwater Elevation (site datum, from TOC)	(ft/msl)		
	Total Well Depth (from TOC)	(ft)			Stick Up (from ground elevation)	(ft)			Casing ID (in)	Casing Material		
	Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit.								Well Elevation, DTW, and Groundwater Elevation must be current.			
STABILIZATION DATA (Optional)	Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (umhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	DTW (ft)			
			1 st	1 st								
			2 nd	2 nd								
			3 rd	3 rd								
			4 th	4 th								
Suggested range for 3 consec readings or note Permit/State requirements.				+/- 0.2	+/- 3%	--	--	+/- 10%	+/- 25 mV	Stabilize		
Stabilization Data Fields are Optional (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.												
FIELD DATA	SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other:				
	02/04/14	8.28						Units				
Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).												
Sample Appearance: clear, slightly turbid				Odor: no	Color: light tan	Other: flow increased with time						
Weather Conditions (required daily, or as conditions change):				Direction/Speed: slight breeze	Outlook: cloudy, rainy	Precipitation: (Y or N)						
Specific Comments (including purge/well volume calculations if required):												
FIELD COMMENTS	time	PH	flow	flow measurements								
	A 10:55	8.28	1 sec/L	$\frac{1}{2.5} \text{ in} = 0.25 \text{ ft}^3/\text{sec}$	$0.75 \text{ in} = 0.15 \text{ ft}^3/\text{sec}$							
	B 11:10	8.42	1 sec/L	$1.50 \text{ in} = 0.3 \text{ ft}^3/\text{sec}$	$1.50 \text{ in} = 0.3 \text{ ft}^3/\text{sec}$							
	C 11:25	8.05	1 sec/L	$2.00 \text{ in} = 0.4 \text{ ft}^3/\text{sec}$	$1.75 \text{ in} = 0.35 \text{ ft}^3/\text{sec}$							
	D 11:40	8.18	1 sec/L	$2.00 \text{ in} = 0.4 \text{ ft}^3/\text{sec}$	$2 \text{ in} = 0.4 \text{ ft}^3/\text{sec}$							
I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):												
2, 4, 14	Dustin Goto			2.78 ft								
2, 4, 14	Michelle Wang			Michelle Wang								
Date	Name	Signature										
DISTRIBUTION: WHITE/ORIGINAL - Sample MELDOW - Returned to Client, PINK - Field Copy												

Login Sample Receipt Checklist

Client: Waste Management

Job Number: 280-51935-1

Login Number: 51935

List Source: TestAmerica Denver

List Number: 1

Creator: Dedio, Michael T

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: Waste Management

Job Number: 280-51935-1

Login Number: 51935

List Source: TestAmerica Irvine

List Number: 1

List Creation: 02/14/14 03:32 PM

Creator: Chy, Jonathan

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	